Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Transition from TTY to Real-Time Text Technology	)	CG Docket No. 16-145
	)	
	)	
Petition for Rulemaking to Update the Commission's Rules for access to Support the Transition from TTY to Real-Time Text Technology, and Petition for Waiver of rules Requiring Support of TTY Technology	)	GN Docket No. 15-178

REPLY COMMENTS OF CONSUMER GROUPS

Telecommunications for the Deaf and Hard of Hearing, Inc.
National Association of the Deaf
Hearing Loss Association of America
Association of Late Deafened Adults
Deaf Seniors of America
Cerebral Palsy and Deaf Organization

Telecommunications for the Deaf and Hard of Hearing, Inc., National Association of the Deaf, Hearing Loss Association of America, Association of Late Deafened Adults, Deaf Seniors of America, and Cerebral Palsy and Deaf Organization (collectively, "Consumer Groups"), respectfully reply to comments filed on the Federal Communications Commission's ("FCC" or "Commission") April 29, 2016 Notice of Proposed Rulemaking in the above-referenced proceedings ("NPRM"),[1] which aims to transition from text telephone (TTY) to real-time text (RTT) technology.

[1] *Transition from TTY to Real-Time Text Technology; Petition for Rulemaking To Update The Commission's Rules For Access To Support The Transition from TTY to Real-Time Text Technology, And Petition For Waiver Of Rules Requiring Support Of TTY Technology*, CG Docket No. 16-145 & GN Docket No. 15-178, Notice of Proposed Rulemaking, FCC 16-53 (Apr. 29, 2016) ("NPRM"). Unless otherwise noted, all cited comments were filed in response

I. Integration of RTT into Telecommunications Relay Services ("TRS") is Essential to RTT Accessibility and Integration into the Mainstream Telecommunications Ecosystem.

In the NPRM, the Commission notes that "RTT can be used to enhance the ability of TRS to provide functionally equivalent telephone service,"[2] and seeks comment on "how to integrate RTT into the provision of TRS."[3] In its comments, Sorenson opposes requiring providers of video relay services ("VRS") or IP captioned telephone relay services ("CTS") to incorporate RTT into their terminal equipment and applications, stating that "RTT cannot replace VRS or IP CTS, and the Commission should not require that VRS and IP CTS providers incur the unnecessary costs associated with implementing RTT."[4] While Consumer Groups agree that RTT should not serve as a replacement for TRS, Consumer Groups strongly believe that the effective integration of RTT into TRS is essential to RTT's widespread accessibility and larger integration into the mainstream telecommunications ecosystem.

Specifically, TRS functional equivalence would be significantly enhanced if RTT capabilities are incorporated into TRS platforms and terminal equipment in such a way that IP-RTT, IP-CTS, and IP-VRS are available via an accessible interface. This means, among other things, that a consumer must be able to readily access the appropriate relay service whenever their wireless carrier-provided ten-digit number is called.[5] Consumer Groups agree with RERC and Omnitor that interoperability with TRS will allow users to "use the same communication equipment for user-to-user calls, VRS calls and text relay calls" and to "select the appropriate type of relay service depending on the situation at hand," which in turn will allow them to "use the same device to communicate with everyone in the community."[6]

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to this NPRM during the initial comment period.

[2] NPRM at ¶36.

[3] *Id*. at ¶78.

[4] Comments of Sorenson at 7 (Jul. 11, 2016).

[5] *See* Comments of RERC and Omnitor at 19 (Jul. 11, 2016).

[6] *Id*. at 19; *see also* NPRM at ¶78 (explaining Omnitor's request to "require relay providers to

As TRS become increasingly IP-based, Consumer Groups also believe that the Commission should require relay providers to support an RTT mode between the user and the communications assistant ("CA"), which will "improve the functional equivalence of the IP Relay interface" and "facilitate relay service modes, such as VCO and HCO."[7] With regard to IP-VRS, the Commission should "require VRS providers to support an RTT mode between the user and the CA, so that RTT can be used to supplement communications in sign language with text during VRS calls."[8] With regard to IP-CTS, Consumer Groups urge the Commission to require that providers "support RTT transmission in any voice channels they provide and in any off-the-shelf equipment provided to IP CTS users."[9]

II. The Commission Should Adopt RFC 4103 as a Safe Harbor Standard.

Consumer Groups reiterate the need for a common standard in order to achieve RTT interoperability across communication platforms, networks, and devices.[10] To best achieve this interoperability, Consumer Groups strongly urge the Commission to adopt RFC 4103 as a safe harbor standard, and to reject calls for the alternative use of performance objectives.

Several comments from industry request increased flexibility in the implementation of the rules proposed in this proceeding,[11] with some calling for the use of performance objective instead of a common standard.[12] Consumer Groups agree with the Commission that the

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incorporate RTT into their systems, so that callers can use RTT terminals to access TRS with a single step, using ten digit numbers") (citing Comments of Omnitor, GN Docket No. 15-178, at 6).

[7] *See* NPRM at ¶78 (citing Technology Research Centers, Proposal R1v3 at 9; DAC Feb 2016 Recommendations at 3 (Recommendation #8)).

[8] *See* NPRM at ¶78.

[9] *See id*. at ¶78.

[10] *See id*. at ¶48.

[11] *See, e.g.*, Comments of T-Mobile at 6-11 (Jul. 11, 2016); Comments of AT&T at 9 (Jul. 11, 2016); Comments of Verizon at 4-10 (Jul. 11, 2016); Comments of CTA at 4-8; Comments of CTIA at 8-13 (Jul. 11, 2016).

[12] *See, e.g.*, Comments of CTIA at 11-12 (Jul. 11, 2016) (urging the Commission to "decline to

proposed rules will achieve interoperability for RTT services while also incorporating "key principles of flexibility and technology neutrality."[13] As Consumer Groups explained in their initial comments, under the Commission's proposal, RFC 4103 is merely a floor, not a ceiling.[14] The proposal does not mandate that covered entities adopt RFC 4103, as they are free to "adher[e] to different internal RTT standards - so long as their RTT support offers the same functions and capabilities as the selected standard, and is interoperable with the standard's format where they connect with other providers."[15]

Interoperability is especially critical in providing direct access for deaf and hard of hearing consumers to 911. Telephone emergency services are currently only required to be compatible with the Baudot format, and the Department of Justice, under the ADA, does not require public entities to provide direct access to 911 to other formats until those formats are technically proven to operate in a reliable and compatible manner.[16] An interoperability standard will be key in demonstrating that RTT is sufficiently "reliable and compatible" so as to qualify as a format that should receive direct access to 911. If the Commission allows the use of performance standards, as opposed to a baseline interoperability safe harbor standard, this reliability and compatibility will be more difficult to prove, and RTT will run the risk of not receiving direct access to 911.

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mandate a particular means of RTT implementation and instead follow the proven, technology-neutral performance objective approach adopted elsewhere in the Commission's rules").

[13] *See* NPRM at ¶51 (citing Comments of TIA, GN Docket No. 15-178, at 2); Comments of Consumer Groups at 11 (Jul. 11, 2016).

[14] *See* Comments of Consumer Groups at 11 (Jul. 11, 2016).

[15] NPRM at ¶51; *see also* Comments of Consumer Groups at 11 (Jul. 11, 2016).

[16] *See* Title II Technical Assistance Manual, II-7.3100 General ("At present, telephone emergency services must only be compatible with the Baudot format. Until it can be technically proven that communications in another format can operate in a reliable and compatible manner in a given telephone emergency environment, a public entity would not be required to provide direct access to computer modems using formats other than Baudot.").

Finally, Consumer Groups reiterate that "[a]doption of the RFC 4103 standard does not bar development of and transition to new standards in the future; rather, a safe harbor standard simply ensures that as new standards are developed and introduced, consumers on different networks or using different devices are still able to communicate with one another."[17]

III. IP-CTS Necessitates Shorter Latency Between Text Entry and Its Transmission.

Consumer Groups reiterate that a critical feature of RTT, which would make it both a suitable alternative to TTY and a functional equivalent to voice communication, is that the communication is instantaneous.[18] Although a latency period of one second might be acceptable for non-voice-synchronous typing,[19] Consumer Groups agree with RERC and Omnitor that "for speech conversations, the acceptable end-to-end latency is much lower than 1 second."[20] RERC and Omnitor note that in the case of IP-CTS, if latencies are higher than one second, "users start experiencing," among other frustrations, "problems with turn-taking," and that "[c]onsumers have indicated that lag between speech and captions is their number one complaint about IP-CTS."[21] For these reasons, Consumer Groups agree with RERC and Omnitor that "for the captioned telephony use case, a shorter latency between text entry and its transmission is highly desirable," and "a maximum of 400 ms end-to-end latency for captions via real-time text that is

[17] Comments of Consumer Groups at 11 (Jul. 11, 2016).
[18] *See id.* at 14.
[19] *See id.* at 14 ("The Consumer Groups support the Commission's proposal to require that RTT characters 'be transmitted within one second of when they are generated' and 'with a point-to-point transmission latency that is no greater than that provided for voice communication.'").
[20] *See* Comments of RERC and Omnitor at 49 (Jul. 11, 2016).
[21] *Id*. at 49. "[I]n a survey done by Gallaudet University this was picked as the top problem with 60% of respondents selecting it as an issue." *Id*. (citing Linda Kozma-Spytek, Paula Tucker, and Christian Vogler. Presentation of survey results given to FCC on April 24, 2013. Online: http://tap.gallaudet.edu/CTSSurvey/results.asp (Last Accessed: 7/11/2016)).

similar to the latency for voice, would provide the best possible captioned telephone service usability."[22]

IV. RTT Should Be Available as a Native, Default-Activated Feature in Order to Maximize Accessibility.

Some commenters argue that the Commission should allow carriers to deploy RTT as they see fit, and that it would be acceptable to make RTT applications available for download.[23] Even if an "over-the-top" approach is permitted for a limited time during the TTY-RTT transition period, Consumer Groups agree with RERC and Omnitor that "[a] built-in native, and by default activated, solution in all new devices is the only approach that provides real functional equivalence, whereby users can have calls in any combination of RTT and voice with anybody else."[24] Indeed, Consumer Groups strongly believe that native functionality of RTT is imperative to ensuring that deaf and hard of hearing users can reach, and be reached by, everyone in their life with the technology, including "loved ones, friends, doctors, senior service agencies" and others.[25] Consumer Groups urge the Commission to keep native functionality as the ultimate goal of the TTY-RTT transition.

V. Text-To-911 Has Serious Communication Limitations That RTT Can Help To Overcome.

Consumer Groups disagree with CTIA that, because text-to-911 is superior to wireless TTY, it represents sufficient access to emergency communication.[26] Instead, Consumer Groups reiterate the severe functional limitations of SMS-based text-to-911—limitations that RTT can help to overcome. RERC and Omnitor observe in their comments that "SMS support in text-to-

[22] Comments of RERC and Omnitor at 49 (Jul. 11, 2016).
[23] *See, e.g.*, Comments of Verizon at 9 (Jul. 11, 2016); Comments of CTIA at 16-17 (Jul. 11, 2016).
[24] Comments of RERC and Omnitor at 14 (Jul. 11, 2016).
[25] *See id*. at 14-15.
[26] *See* Comments of CTIA at 19 (Jul. 11, 2016).

9-1-1 is important because of the wide spread use of SMS, but it is an extremely slow and awkward medium compared to a call with free flow of voice and RTT."[27] Further, "[t]he implementation of current text-to-9-1-1 is . . . very limited, with no opportunity to mix text and voice in the same call, thus not at all satisfying the communication needs of many users."[28] Consumer Groups strongly urge the Commission to reject the notion that SMS-based text-to-911 is sufficient, so as not to stunt development and implementation of technologies, such as RTT, that offer potentially lifesaving improvements to emergency communication flow.

VI. RTT Should Remain Backward Compatible With TTY Technology Until TTY is No Longer in Use.

As Consumer Groups and others have noted, it is imperative that the transition from TTY to RTT not leave behind those users that still rely on TTY.[29] Consumer Groups have throughout this proceeding urged the Commission to require RTT to remain backward compatible with TTY technology until TTY is no longer in use.[30] As RERC and Omnitor state in their comments, "[a]s long as there are people whose only connection to telecom is via the PSTN there will be a need for TTY support because it is the only technology that works on the PSTN. If the FCC is looking [for a] sunset trigger for TTY support, it would be the day that no-one is dependent only on the PSTN for telecom."[31] Hamilton similarly urges that "the RTT transition and backward

[27] Comments of RERC and Omnitor at 22 (Jul. 11, 2016).

[28] *Id*. 22 (Jul. 11, 2016). "It should be noted that there are many people for whom speech, not text, is their primary means of communication, even though it does not work well for them on the phone (or even in person). Older adults who are progressively losing their hearing are a prime example of such a group . . . [and] it is important that they be able to communicate in speech but have any speech that comes back to them be augmented with text to be sure they understand what is said." *Id*. at 23.

[29] *See* Comments of Consumer Groups at 12 (Jul. 11, 2016) (noting that "TTYs continue to be a critical communications technology for some users"); Comments of Hamilton at 2 (Jul. 11, 2016) (urging the Commission that it "must be mindful of the need to protect individuals who, through necessity or otherwise, continue to rely on TTY during the transition").

[30] *See, e.g.*, Comments of Consumer Groups at 12-13 (Jul. 11, 2016).

[31] Comments of RERC and Omnitor at 43 (Jul. 11, 2016).

compatibility requirements should last for as long as it takes all TTY users to make the transition, i.e., until the Public Switched Telephone Network ('PSTN') sunsets."[32] The Commission should adopt a sunset period that will be triggered by such an event, and should reject adopting a firm sunset date.[33]

The Commission should also consider other ways to help ensure that those who still rely on TTY technology are not left behind during the transition. For instance, in households where landline-connected-TTYs must connect to LTE, rather than force every home gateway to perform a TTY-to-RTT conversion, which would still subject users to the usual TTY problems,[34] the Commission could consider conducting a distribution program of TTY replacements that are compatible with IP.

[32] Comments of Hamilton at 2 (Jul. 11, 2016).

[33] If the Commission does decide to set a firm sunset date, Consumer Groups urge that it should be *no earlier than* the 2025 sunset date of certain interoperability provisions in the recent IP Transition Order, which says that replacement services must remain interoperable with certain low-speed modem devices—like fax machines, home security alarms, and medical monitoring devices.

[34] *See* NPRM at ¶11.

Respectfully submitted,

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